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REMARKS**Claim Amendment**

Claims 1, 12-22 and 34-44 had been cancelled. Claims 2 and 7 had been written in independent form. Claim 23 has been amended to incorporate the subject matter of its parent Claim 18, now cancelled.

New Claims 45-49 had added. New Claims 45-51 recapture the subject matter of original Claims 19, 20, 22 and 40-44, now cancelled, and reflect dependencies on Claim 23 as amended.

This amendment introduces no new matter.

Interview Summary

An interview with the Examiner took place on February 17, 2004. Examiner Ba K. Trinh, representing the U.S. Patent and Trademark Office and Steven G. Davis, Esq., representing the Applicants, participated. The Applicants thank the Examiner for granting and conducting the interview.

In the course of the interview, the arguments proposed by the Applicants to overcome the rejection of record under 35 U.S.C. §103 over Crivello I and II were discussed.

The Applicants presented arguments that neither reference provided motivation to modify the polysiloxanes disclosed in the cited references to obtain either a compound of Claim 1 or a holographic recording media of Claim 23 and that expectation of success of such modification is not found in Crivello I and II.

For a summary of the interview, Applicants refer to the Examiner's summary statement.

The Examiner and the Applicants were unable to reach an agreement on Claim 1. The Examiner stated that he would take Claim 23 and the pertaining arguments, presented by the Applicants, under advisement.

Applicants now respond to the Office Action at hand.

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Rejection of Claims 1 and 23 Under 35 U.S.C. § 103 (a)**1. The Examiner's Rejection**

The Examiner rejected Claim 1 and 23 over Crivello *et al.*, "The Synthesis, Characterization and Photoinitiated Cationic Polymerization of Silicon-Containing Epoxy Resins", *J. Polymer Science* (1990): 28, 479-503 (Crivello I) in view of Crivello *et al.*, "Synthesis and Polymerization of Novel Cationically Polymerizable Monomers", *J. Macromolecular Science* (1994): 8, 1001-1029 (Crivello II).

The Examiner stated that Crivello I and II disclose polysiloxanes that differ from the compound of Claims 1 and 23 in the number of repeating moieties -O-Si-. The Examiner further stated that because of the teaching of equivalency of monosiloxanes and polysiloxanes contained in Crivello I, it would be *prima facie* obvious to replace monosiloxane moiety -O-Si- with multiple repeating moieties -O-Si-.

2. Applicants' Amendment

Applicants cancelled Claim 1 without prejudice. Thus, the rejection of Claim 1 is rendered moot.

Claim 23 to a holographic recording media was rewritten in an independent form by incorporating the subject matter of its parent Claim 18. The Applicants respectfully disagree with the Examiner's statement that the subject matter of Claim 23 is obvious over Crivello I and II.

3. Claim 23 is Non-Obvious over Crivello I in view of Crivello II.

The Applicants submit that the holographic recording media (HRM) of Claim 23 is non-obvious in view of Crivello I and II.

Where the claimed invention is rejected as *prima facie* obvious in view of a combination of references, M.P.E.P. § 2142 requires that:

"[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of

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success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."

Claim 23 is directed to a holographic recording media and recites three ingredients that include a "binder", as well as an optional sensitizer. The Applicants submit that the Examiner failed to establish a *prima facie* case of obviousness because neither Crivello I nor Crivello II teach a binder, nor is there any motivation to add a binder to the compositions of Crivello. Moreover, none of the materials disclosed in the Crivello references are suitable binders as that term is defined in the instant application. In fact, the concept of an HRM is not disclosed nor suggested in those two references.

The purpose of the binder is disclosed on page 2, lines 1-8, of the application as filed:

"In the illuminated regions of the interference pattern, the monomer or oligomer undergoes polymerization to form a polymer that has a refractive index different from that of the binder. Diffusion of the monomer or oligomer into the illuminated regions, with consequent chemical segregation of binder from these areas and alteration in its concentration in the non-illuminated regions, produces spatial separation between the polymer formed from the monomer or oligomer and the binder, thereby providing the refractive index modulation needed to form a hologram."

In other words, during recording of a hologram, the epoxide monomers of Claim 23 polymerize in the regions exposed to light. Because polymerization depletes monomer concentration in these regions, monomers from unexposed areas migrate into the light-exposed regions where they displace molecules of a binder. This migration of species results in segregation of the binder and the polymerized monomers. Because the binder and the polymer have different refractive indices, this segregation produces a recording medium with refractive index variable from region to region. This variability corresponds to the pattern of light exposure and, therefore, can be used to record and store the recorded image.

The instant application further defines a suitable binder on page 16, line 26 through page 17, line 18. In particular, the application discloses that

"The binder used should, of course, be chosen such that ... it is miscible with the monomers used and the polymerized structure obtained from such monomers, and its refractive index is significantly different from that of the polymerized monomer or oligomer (e.g., the refractive index of the binder differs from the refractive index of the polymerized monomer by at least 0.04 and preferably at least 0.09)."

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The application further provides examples of suitable binders.

Moreover, it is known by one skilled in the art that a binder cannot be a fluid of low viscosity, nor a volatile compound such as a solvent. This follows from the description of the purpose of the binder given above: the permanency of the information storage depends on the local differences of refractive indices of a binder and a polymer. If the binder evaporated (as it would had it been volatile) or changed its local concentration or relative abundance (as would be the case with a low-viscosity fluid), the stored information would be effectively erased.

The Applicants submit that nowhere in the cited art is such a binder taught or suggested and that one skilled in the art would not be motivated to add such a binder to any of the compositions disclosed in Crivello I and II.

The Applicants respectfully request that rejection of Claim 23 under 35 U.S.C. §103(a) be reconsidered and removed.

Applicants propose the foregoing and ask for acceptance by the Examiner of the proposed amendment in order to move prosecution of the subject application forward in good faith. The claims as presented and proposed recite the present invention in terms that are novel and not made obvious by the cited art.

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CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (2-11, 23-33 and 45-51) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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